U Series PLC Hardware Manual

Shenzhen Honyee Technology Co., Ltd.

V2407

Preface

Dear customer:

Thank you for choosing our programmable controller.

This user manual mainly gives a brief introduction to the application of the controller. This user manual provides the knowledge and precautions required for using this controller. Please use it after being familiar with the safety precautions of this product.

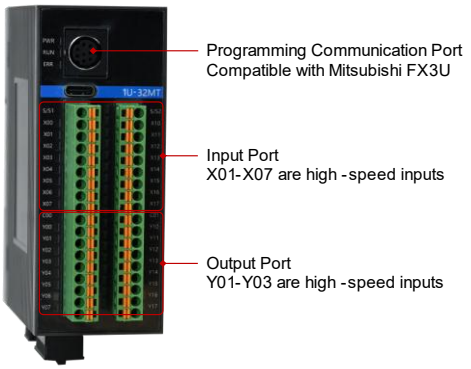
Due to product improvements, changes in specifications, editing versions, etc., there will be appropriate changes without prior notice.

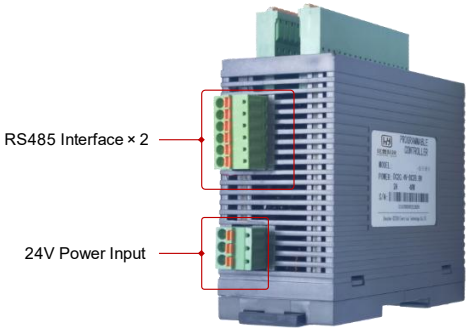
We do not assume any direct, indirect, special, incidental or consequential loss or liability caused by improper use of this manual or this product.

Contents

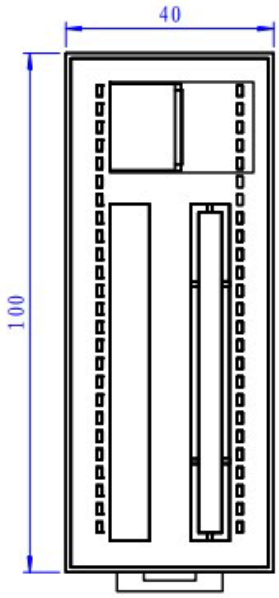
I. PLC Hardware Introduction

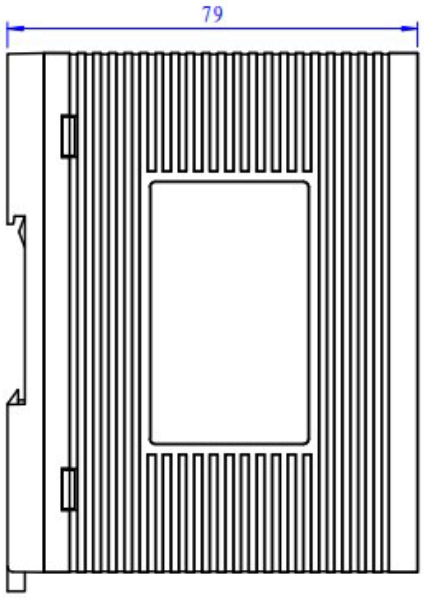
1. Interface introduction





2. Installation Dimensions



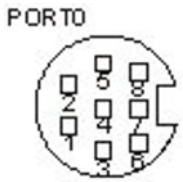


3. Communication Port Definition

The PORT0 COM port of the U series is RS232 Interface, pin definition as shown in Table 1. PORT1 and PORT2 are RS485 interface. PORT1: A1/B1/G1; PORT2: A2/B2/G2. PORT0 and PORT2 can be used as user programming interfaces. It is recommended that users use USBACAB230 cable to connect PORT0 to the computer. Under Honyee "GC protocol", the default configuration of the serial port is 19200-8-no parity-2,

MODBUS Slave 1. Under 3U protocol, the default configuration of the serial port is 9600-7- even parity -1, FX3U communication protocol.

Table 1 Communication port and pin definition

	Pin	Name	Description
	1, 2	VCC_+5V	5V power supply
	7, 8	GND	Grounding
	4	RXD	Serial data receiving (RS232 to PLC)
	5	TXD	Serial data sending (PLC to RS232)
	6	Reserve	Undefined pins, users are prohibited from connecting

3U series does not support PORT0. It supports NET port and Ethernet downloading, monitoring, and debugging program. It supports MODBUS TCP; supports MC (binary) protocol; default IP address 192.168.2.90; MODBUS TCP port number 502; program debugging and MC (binary) port number 5551.

4. Terminal Definition

PIN	1		2	
	1	S/S1	Input COM+	S/S2	Input COM
	2	X00	Input 0 (High speed)	X10	Input 8
	3	X01	Input 1 (High speed)	X11	Input 9
	4	X02	Input 2 (High speed)	X12	Input 10
	5	X03	Input 3 (High speed)	X13	Input 11
	6	X04	Input 4 (High speed)	X14	Input 12
	7	X05	Input 5 (High speed)	X15	Input 13
	8	X06	Input 6 (High speed)	X16	Input 14

	PIN	1		2
	9	X07	Input 7 (High speed)	X17	Input 15
	10	C01	Output COM-	C02	Output COM-
	11	Y00	Output 0	Y10	Output 8
	12	Y01	Output 1 (High speed)	Y11	Output 9
	13	Y02	Output 2 (High speed)	Y12	Output 10
	14	Y03	Output 3 (High speed)	Y13	Output 11
	15	Y04	Output 4	Y14	Output 12
	16	Y05	Output 5	Y15	Output 13
	17	Y06	Output 6	Y16	Output 14
	18	Y07	Output 7	Y17	Output 15

5. Analog Terminal Definition

	PIN			Register
Modulus correspondence Voltage: 10V – 2000 Current: 20mA – 1000	1	V0+	Analog input 0 positive signal	
	2	I0+	Analog input 0 current terminal, used in parallel with the positive signal	D8110/SD410
	3	GND	Analog input 0 negative signal	
	4	V1+	Analog input 1 positive signal	
	5	I1+	Analog input 1 current terminal, used in parallel with the positive signal	D8111/SD411
	6	GND	Analog input 1 negative signal	
	7	V2+	Analog input 2 positive signal	

	PIN			Register
Modulus correspondence Voltage: 10V – 2000 Current: 20mA – 1000	8	I2+	Analog input 2 current terminal, used in parallel with the positive signal	D8112/SD412
	9	GND	Analog input 2 negative signal	
	10	V3+	Analog input 3 positive signal	
	11	I3+	Analog input 3 current terminal, used in parallel with the positive signal	D8113/SD413
	12	GND	Analog input 3 negative signal	
	13	VO0+	Analog output 0 positive signal	
	14	IO0+	Analog output 0 current terminal	D8114/SD414
	15	GND	Analog output 0 negative signal	
	16	VO1+	Analog output 1 positive signal	
	17	IO1+	Analog output 1 current terminal	D8115/SD415
	18	GND	Analog output 1 negative signal	

II. Chapter 2 PLC Input and Output Ports

1. Input specifications

Item		High-speed input port (X0~X7)	Common input terminal
Signal input method		Sink type, NPN	
Electrical para-meters	Detection voltage	DC24V	
	Input resistance	3.3KΩ	4.3KΩ
	Input ON	External loop resistance < 400Ω	
	Input OFF	External loop resistance > 24KΩ	
Filter	Software filtering	Can be set between 1~64ms by user program	
	Hardware filtering	X0~X1: 10μs X2~X7: 50μs	10ms
High-speed function		X0 ~ X7 high-speed counting, interruption, pulse capture function X0~X1: 50KHz, X2~X7: 10KHz The total input frequency must be less than 80KHz	
Common terminal		S/Sn ––Connect to 24V	

The counter input port has a corresponding maximum frequency limit. When the input frequency exceeds this limit, it may cause inaccurate counting, or the system may not operate normally. Please arrange the input ports reasonably and select appropriate external sensors.

U series PLC input terminals are divided into several groups. Each group provides a port "S/Sn" to select the input mode of the signal, which can be set to sink mode or source input mode.

Connect "S/Sn " to " 24V+ ", that is, set the circuit to sink input mode, and NPN type sensor can be connected. The wiring diagram is shown in the figure below.

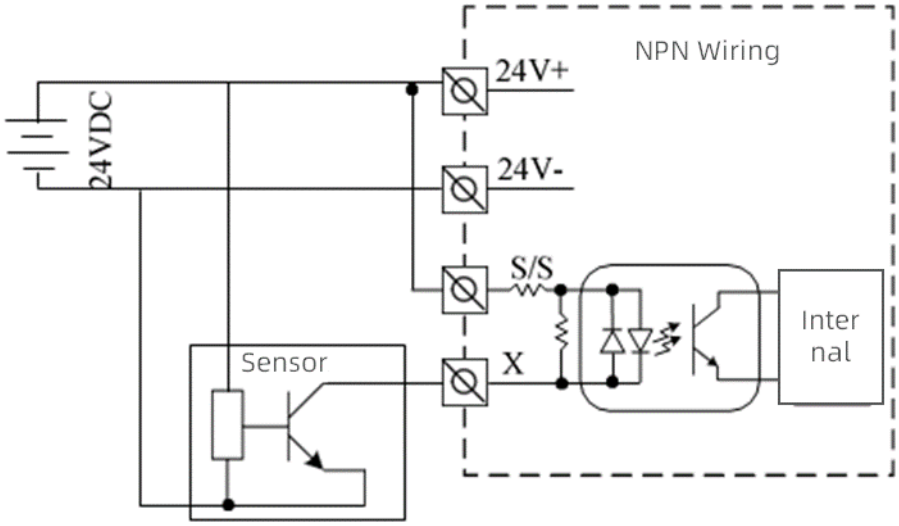


Figure 1 NPN input diagram

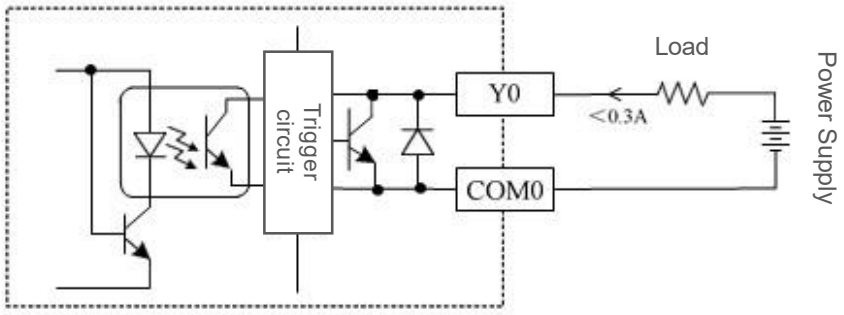


Figure 2 Transistor output diagram

2. Output specifications

U series PLC are divided into several groups, each group is electrically isolated, and the output contacts of different groups are connected to different power supply circuits. The outputs include relay and transistor output types.

For transistor output type, Y0~Y3 can be used as high-speed pulse output ports.

Item		Content
Output		The output state is " On" , the contact is closed. When the output state is " Off ", the contact is open.
Common terminal		There are 2 groups, each with a common terminal C0n, which is suitable for control circuits with different potentials. The common terminals are insulated and isolated from each other.
Features		Low driving current, high frequency and long life
Applications		Applications that require high frequency and long life, such as controlling servo amplifiers and frequently operated electromagnets
Loop power supply rated voltage		5~24VDC
Circuit insulation		Optocoupler insulation
Action Instructions		The LED lights up when the optocoupler is driven
Open circuit leakage current		Less than 0.1 mA/24VDC
Minimum load		5mA (5 to 24 VDC)
Maximum output current	**Resistive load**	0.8A/4 point 1.6A/8 point
	Inductive load	7.2W/24VDC
Response time		Y0 ~ Y3 : less than 5us/ (10mA above) Others: less than 0.5ms/ (100mA or more)
High-speed pulse output port		Y0~Y3 are high-speed pulse output ports Can control up to 4 axes, with a maximum output speed of 100K pulses
Fuse protection		none

3. Analog ports

Item		Specifications	
Conversion speed		2ms/ channel	
Analog input	Voltage	0~10V, input impedance 500kΩ	4 channels can be used simultaneously, and the input range can be selected by setting BFM (see the description of Table 3-3 for details)
	Current	-20mA~20mA, input impedance is 500Ω	
Digital output		Input voltage 0~2000, input current 0~1000	
Resolution	Voltage	5mV	
	Current	20μA	
Accuracy		Full scale ±1%	
Conversion speed		1ms/channel (changing the number of channels used does not change the conversion speed)	
Analog output	Voltage	0 ~ 10VDC (external load impedance > 1kΩ)	
	Current	0 ~ 20mA (external load impedance < 500Ω) 4 ~ 20mA (external load impedance is < 500Ω)	
Digital input		Output voltage: 0 ~ 2000, output current: 0~1000	
Resolution	Voltage	5mV	
	Current	20μA	
Accuracy		±1% (for 10V full scale) ±1% (for 20mA full scale)	

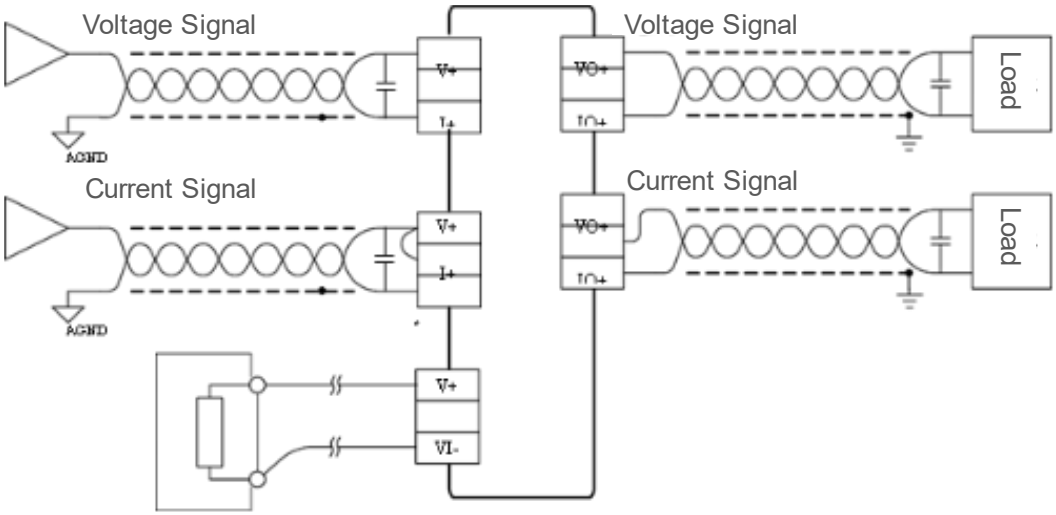


Figure 3 Analog circuit

III. PLC Output and Servo Motor Wiring

1. The wiring between output port and motor

Y0~Y3 of U series PLC are high-speed pulse output ports, which apply single-ended pulse transmission to control the servo motor. Figure 4 shows the wiring method with the servo motor driver. The power supply can use the servo driver's internal 24V power supply or an external 24V power supply.

The direction signal can be connected using a non-high-speed pulse output port. Y10 is used for demonstration here.

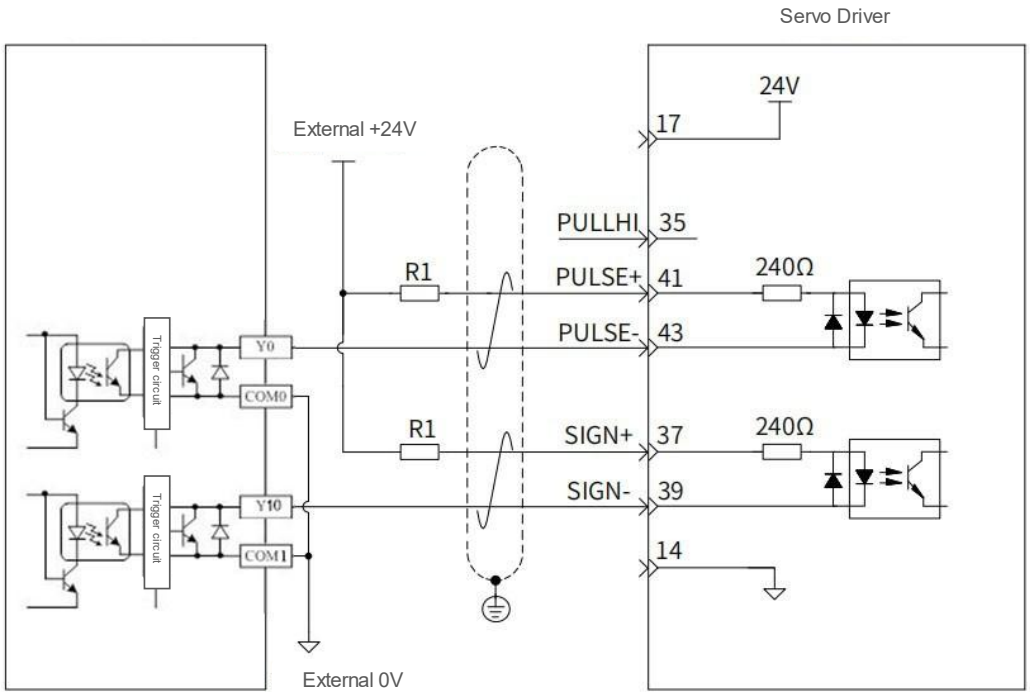


Figure 4 Wiring between U series PLC and servo drive